

ABSTRACT OF THE DISCLOSURE

In a system and method for simultaneously receiving or switching between dual frequency carrier signals in a GPS receiver, the GPS receiver is adapted to utilize different harmonics of a sub-harmonic frequency generator, which may include a lower frequency voltage controlled oscillator (VCO) to detect the L1 and L2 GPS carriers. A sub-harmonic mixer may be used to simultaneously down convert the L1 and L2 signals to a lower intermediate frequency (IF). A second mixer may be an image reject (IR) mixer used to separate the downconverted L1 and L2 signals. This mixer may be configured to simultaneously monitor the L1 and L2 signals, or to switch between the L1 and L2 signals. High frequency switching is not required of the radio frequency (RF) input or local oscillator signals, and simultaneous L1 and L2 reception is enabled without a 3dB image noise degradation. This system and method minimizes the RF components and power dissipation in a dual frequency GPS receiver, while optimizing the functionality and performance.